
FOUR NEW SPECIES OF *ELAPHOGLOSSUM* (ELAPHOGLOSSACEAE) FROM VENEZUELA

In a series of papers (Mickel, 1985, 1987, 1990) I published 37 new taxa of *Elaphoglossum* from Venezuela. Specimens sent recently for identification included four more novelties, making a total of 107 species and three subspecific taxa known from that country.

Elaphoglossum polyblepharum Mickel, sp. nov. TYPE: Venezuela. Territorio Federal Amazonas: Dept. Atures, W side of valley of Río Coro-Coro, 8 km NNW of settlement of Yutaje, 05°41'N, 66°08'30"W, 1 Mar. 1987, *Liesner & Holst 21517* (holotype, NY; isotype, MO). Figure 1A.

Ab *E. erinaceo* frondium squamis brevioribus rubro-brunneis necnon laminae facie abaxiali squamosa diversum.

Rhizome compact, 4–6 mm diam.; rhizome scales linear-lanceolate, orange, ca. 5 mm long, entire; phyllopodia lacking; fronds approximate, 30–40 cm long, 3.5–4.6 cm broad; stipe $\frac{1}{4}$ – $\frac{1}{3}$ the frond length, densely clothed with patent, reddish brown, subulate scales 4–6 mm long; blade narrowly elliptic, papyraceous, apex caudate, base broadly cuneate; veins evident, free, ca. 1 mm apart, at 75° angle; hydathodes lacking; blade scales reddish brown, subulate, liberally distributed on abaxial surface, 1–2 mm long, more concentrated on margin, 1.5–2 mm long, and costa, 2–3 mm long, lacking on the adaxial surface; fertile fronds unknown.

Epipetric in wet forests, 900–1,000 m.

Additional specimens examined. VENEZUELA. AMAZONAS: Dept. Atures, same locality as type, *Liesner & Holst 21405* (MO, NY); Dept. Río Negro, Cerro Aratitoyope, 02°10'N, 65°34'W, *Steyermark et al. 130312* (NY).

Elaphoglossum polyblepharum differs from *E. erinaceum* (Fée) Moore in having frond scales reddish brown rather than black-brown, these scales more dense on stipe, conspicuously present on laminar surface, and shorter on margins (1.5–2 mm long vs. 3–4 mm) and costa (2–3 mm long vs. 4–6 mm), and the rhizome scales lighter orange and shorter (ca. 5 mm long vs. 15–20 mm).

Elaphoglossum heteroglossum Mickel, sp. nov.

TYPE: Venezuela. Portuguesa: Dept. Sucre, La Divisoria de la Concepción, 09°18'N, 70°06'W, 23–26 Oct. 1985, *Ortega et al. 2748* (holotype, UC; isotype, NY). Figure 1B.

Lamina utrinque glabra nisi stipite costaque squamis subulatis et margine squamulis lanceolatis provisus praestans.

Rhizome short-creeping, 3–5 mm diam.; rhizome scales linear-lanceolate, orange-tan, 1.5–2 mm long, with sparse hair-teeth; phyllopodia lacking; fronds approximate, 30–40 cm long, 2.9–3.4 cm broad; stipe $\frac{1}{4}$ – $\frac{1}{6}$ the frond length, with scales subulate, patent, 2–2.5 mm long, brown; blade narrowly elliptic, papyraceous, apex acuminate, base narrowly rounded; veins evident, free, ca. 1.5 mm apart, at 60–70° angle; hydathodes lacking; blade scales on adaxial margin lanceolate, brown, 1–2 mm long, appressed, on abaxial costa subulate, brown, spreading, 2–2.5 mm long, abaxial lamina subglabrous, with simple to stellate trichomidia 0.1–0.2 mm long; fertile fronds much smaller than the sterile ($\frac{1}{2}$ – $\frac{1}{3}$ the length), stipe $\frac{1}{2}$ the fertile frond length, blade narrowly elliptic, 8–11 mm broad; fertile blade lacking scales on costa, margin, or among sporangia.

Terrestrial in cloud forests, 1,500–1,800 m.

Elaphoglossum heteroglossum resembles *E. erinaceum* in the subulate scales of stipe and costa but is distinct in the small lanceolate marginal scales vs. long subulate ones, and the much smaller fertile fronds.

Elaphoglossum xiphoides Mickel, sp. nov. TYPE:

Venezuela. Bolívar: a la cuenca media del Río Paragua, 06°03'N, 63°47'W, 13 June 1987, *Stergios 10310* (holotype, NY). Figure 1C.

Ab *E. rhynchophyllo* laminae squamis ovatis gilvis et squamis intersporangialibus nullis abstans.

Rhizome creeping, 1–1.5 mm diam.; rhizome scales linear-lanceolate, orange-tan, ca. 3 mm long, entire; phyllopodia present but indistinct and covered by scales; fronds 6–10 mm apart, 5–7 cm long, 1–1.3 cm broad; stipe $\frac{1}{5}$ – $\frac{1}{3}$ the sterile frond

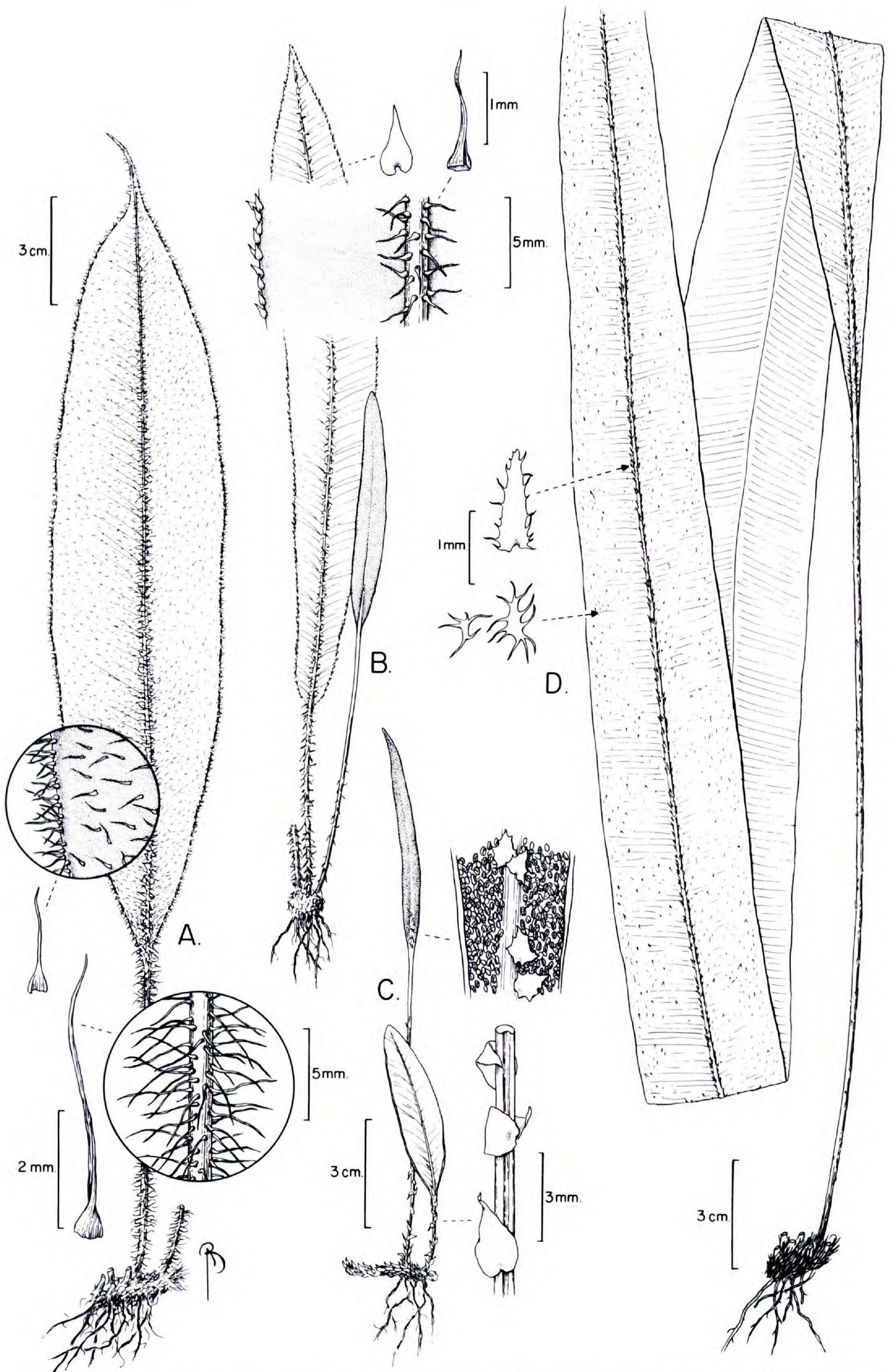


FIGURE 1. — A. *Elaphoglossum polyblepharum*. — B. *E. heteroglossum*. — C. *E. xiphoides*. — D. *E. zosteriformis*.

length, with scales ovate-lanceolate, orange-tan, spreading, ca. 3 mm long; blade elliptic to lanceolate, subcoriaceous, apex obtuse, base cuneate; veins evident, 0.8–1 mm apart, at ca. 60° angle; hydathodes lacking; blade scales scattered, orange-tan, 1–2 mm long on abaxial costa, otherwise blade glabrous; fertile frond longer than sterile (ca. twice as long), stipe $\frac{1}{2}$ – $\frac{3}{5}$ the fertile frond length, blade linear, 5 mm broad; intersporangial scales lacking.

Terrestrial in wet forests, 175 m.

Elaphoglossum xiphoides is similar to *E. rhynchophyllum* Christ in blade shape of fertile and sterile fronds, but the blade scales in the former are tan, ovate, sparse on midvein, and intersporangial scales are lacking whereas in the latter the blade scales are black, linear, dissected, and intersporangial scales are abundant. The phyllopodium is indistinct but present in *E. xiphoides* whereas it is lacking in *E. rhynchophyllum* and other members of the *E. squamipes* complex. It also resembles *E. minutum* (Pohl) Moore in the tan scales and the presence of a phyllopodium, but the fertile blade is acuminate rather than obtuse, the rhizome is longer-creeping, and it occurs at a much lower elevation (175 m vs. over 3,000 m).

***Elaphoglossum zosteriformis* Mickel, sp. nov.**

TYPE: Venezuela. Bolívar: Río Caneracuni, entre Caneracuni y la boca, 04°30'N, 63°42'W, 13–26 Apr. 1988, *Stergios 11930* (holotype, NY; isotype, UC). Figure 1D.

Ab *E. laminarioide* laminae stipitisque squamis lineari-lanceolatis distans.

Rhizome compact, 5 mm diam.; rhizome scales linear-lanceolate, black-brown, lustrous, entire;

phyllopodia present; fronds approximate, ca. 95 cm long, 4.8 cm broad; stipe $\frac{1}{4}$ the frond length, with scales loosely appressed, linear-lanceolate, 1–3 mm long, cilio-denticulate, tan, imbricate to somewhat deciduous; blade linear-elliptic, chartaceous, apex lacking, base narrowly cuneate; veins evident, 1 mm apart, at 80° angle; blade scales adaxially lacking except for a few 1–2 mm long, cilio-denticulate scales on costa, abaxially with scattered (touching but not overlapping) dissected scales ca. 1 mm long, linear-lanceolate, the teeth longer than the scale body width, orange-tan, costa scales linear, 1–2 mm long, cilio-denticulate with teeth shorter than the scale body width; fertile fronds unknown.

Epiphytic in wet forests of “tierra firme y riberenas,” elevation unknown.

In the long, narrow blade *E. zosteriformis* resembles *E. laminarioides* (Bory) Moore, but the former has linear-lanceolate scales on the blade and stipe whereas the latter has round, peltate scales.

LITERATURE CITED

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